

# HP xw Series Workstations

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## Setup and Troubleshooting Guide



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# 1 Locating HP Resources

The following table lists additional resources to help you locate information about your product.

**Table 1-1** Locating HP Resources

What Do You Need Help With?	Where to Find It?
Locating HP Cool Tools information.	<p>Most HP Workstations come preloaded with additional software that is not automatically installed when you first boot your system. Additionally, a number of valuable pre-installed tools on your workstation can enhance your workstation experience. To access or learn more about these applications:</p> <ul style="list-style-type: none"><li>• Click the <b>HP Cool Tools</b> icon on the desktop, or:</li><li>• Open the <b>HP Cool Tools</b> folder by selecting <b>Start &gt; All Programs &gt; HP Cool Tools</b>.</li></ul> <p>To learn more about these applications, click <b>HP Cool Tools—Learn More</b>.</p> <p>To install or launch the applications, click the appropriate application.</p>
Locating additional information.	<p>For online access to technical support information and tools, visit <a href="http://www.hp.com/support">http://www.hp.com/support</a>. Support resources include Web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and proactive notification services.</p>
Locating HP user documentation, white papers, and third-party documentation.	<p>For the latest online documentation, visit <a href="http://www.hp.com/support/workstation_manuals">http://www.hp.com/support/workstation_manuals</a>.</p>
Finding regulatory information.	<p>Refer to the <i>Safety &amp; Regulatory Information</i> guide on the <i>Documentation and Diagnostics</i> CD for product Class information. You can also refer to the label on the workstation chassis.</p>
Locating parts and accessories.	<p>For complete and current information on supported accessories and components, visit <a href="http://partsurfer.hp.com">http://partsurfer.hp.com</a>.</p>
Exploring the contents on the <i>Documentation and Diagnostics</i> CD.	<p>For information on using the CD as a documentation tool or a diagnostics tool, refer to the instructions on the CD.</p> <p>The <i>Documentation and Diagnostics</i> CD includes:</p> <ul style="list-style-type: none"><li>• a copy of this <i>Setup and Troubleshooting</i> guide</li><li>• a link to the latest <i>Service and Technical Reference Guide</i></li><li>• a copy of the <i>Safety and Comfort</i> Guide</li><li>• a copy of the <i>Safety &amp; Regulatory Information</i> guide</li><li>• HP Insight Diagnostics utility</li><li>• task-specific instructions</li></ul>

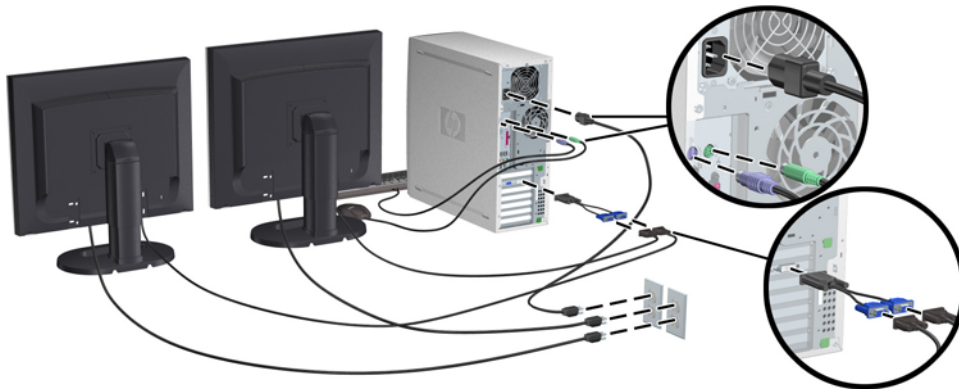
**Table 1-1** Locating HP Resources (continued)

What Do You Need Help With?	Where to Find It?
Signing up for product notifications.	Subscriber's Choice is an HP program that allows you to sign up to receive driver and software alerts, proactive change notifications (PCNs), the HP newsletter, customer advisories, and more. Sign up today at <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> .
Locating workstation QuickSpecs.	The Product Bulletin contains QuickSpecs for HP Workstations. QuickSpecs provide an overall specification review of your product. It includes information about its features including the operating system, power supply, memory, processor, and many other components of the system. To access the QuickSpecs, visit <a href="http://www.hp.com/go/productbulletin">http://www.hp.com/go/productbulletin</a> .
Locating warranty information.	Each system comes with a printed copy of the warranty statement. The warranty is also located on the support web site under "Warranty Information" link for each product or you can visit <a href="http://www.hp.com/support/warranty-lookuptool">http://www.hp.com/support/warranty-lookuptool</a> and search for the warranty applicable to your system.
Locating information about the system board.	The inside of the access panel contains an illustration of the system board layout. Also, you can find additional information by reviewing the <i>Service and Technical Reference Guide</i> that can be found on the <i>Documentation and Diagnostics</i> CD or on the Web at <a href="http://www.hp.com/support/workstation_manuals">http://www.hp.com/support/workstation_manuals</a> .
Locating diagnostics tools.	The <i>Documentation and Diagnostics</i> CD contains the HP Insight Diagnostics utility. To use this utility, see <a href="#">HP Insight Diagnostics</a> .
Locating the latest BIOS and drivers.	Verify you have the latest drivers for your system by visiting <a href="http://www.hp.com/go/workstationsupport">http://www.hp.com/go/workstationsupport</a> .
Determining the meaning of beeps and LED codes.	See <a href="#">Diagnostic Lights and Audible (Beep) Codes</a> for detailed information about beep and Light Emitting Diode (LED) codes applicable to the workstation.
Locating the serial number and Certificate of Authenticity (COA) label (if applicable).	The serial number labels can be found on the top panel or on the side of the unit and at the rear of the unit. The COA label is generally located on the top panel or side panel near the serial number label. See <a href="#">Ventilation, COA Label, and Serial Number Label Information</a> for more information.
Reinstalling the operating system.	See <a href="#">Software Setup for Microsoft® Windows®</a> or <a href="#">Software Setup for Linux</a> for more information on how to load the operating system.
Accessing Web-based support tools to resolve desktop issues.	See <a href="#">Instant Support/Active Chat</a> for more information on how to receive support.
Finding information on how to contact technical support.	<p>Before you call technical support, see <a href="#">Self Troubleshooting</a> for more information. To facilitate your call, see <a href="#">Calling Technical Support</a> for a listing of information you need to have available before you call.</p> <p>For U.S. and Canada, call 1-800-HPINVENT.</p> <p>For a listing of all worldwide technical support phone numbers, visit <a href="http://www.hp.com/support">http://www.hp.com/support</a>, select your region and click <b>Contact HP</b> in the upper-left corner.</p>

## 2 Hardware Setup

### Quick Setup

1. After unpacking your HP Workstation, locate an accessible workspace to set up the system and connect the mouse, keyboard, and power cables to your workstation. Connect the power cable from the workstation to a power outlet.



**Figure 2-1** Workstation setup



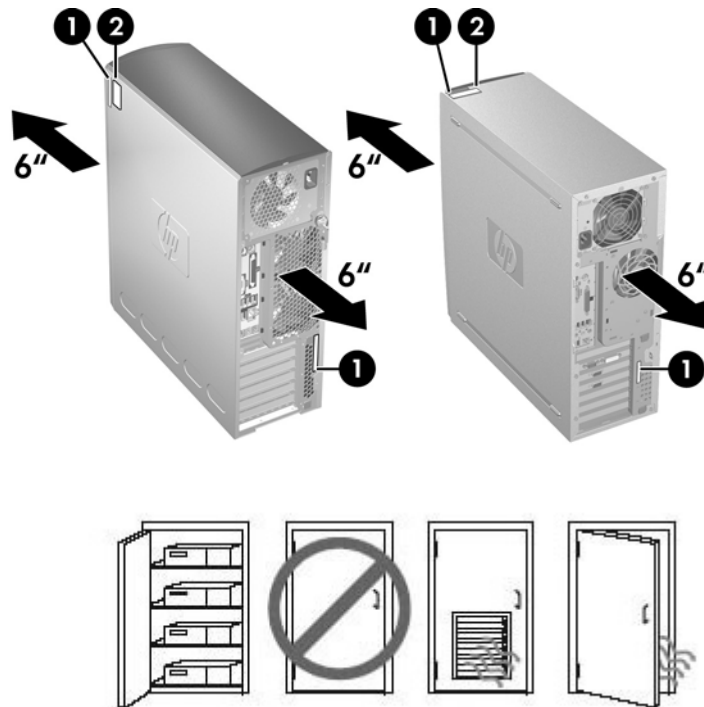
**NOTE** Connect other components, such as a printer, according to the instructions included with the device. For more information on your HP Workstation, refer to the *Documentation and Diagnostics* CD or visit <http://www.hp.com/go/workstationsupport>.

2. Connect the monitor cables to the cable connector and connect the cable connector to the graphics card as shown in the figure above. (If using only one monitor, or a graphics card with two outputs, a cable connector may not be required.) Connect the power cables from the monitors to a power outlet.

## Ventilation, COA Label, and Serial Number Label Information

Proper ventilation for your system is very important. Refer to the notes and illustrations below to properly position your system for maximum airflow.

- Operate the computer on a sturdy, level surface.
- Place the computer in an area that is relatively cool with adequate ventilation. Provide at least 6 inches of clearance at the front and back of the workstation. For cabinet installation, ensure adequate cabinet ventilation and ensure that the ambient temperature within the cabinet does not exceed 35°C (95°F).
- Never restrict the incoming or outgoing airflow of the computer by blocking any vents or air intakes.



**Figure 2-2** Workstation ventilation

Each HP Workstation has two unique serial number labels **1** and a Certificate of Authentication (COA) label **2** (for Windows-preinstalled systems only) as shown in the pictures above. In general, the serial number labels can be found on the top panel or on the side of the unit and at the rear of the unit. Keep this number available when contacting customer service for assistance. The COA label is generally located on the top panel or side of the unit near the serial number label.



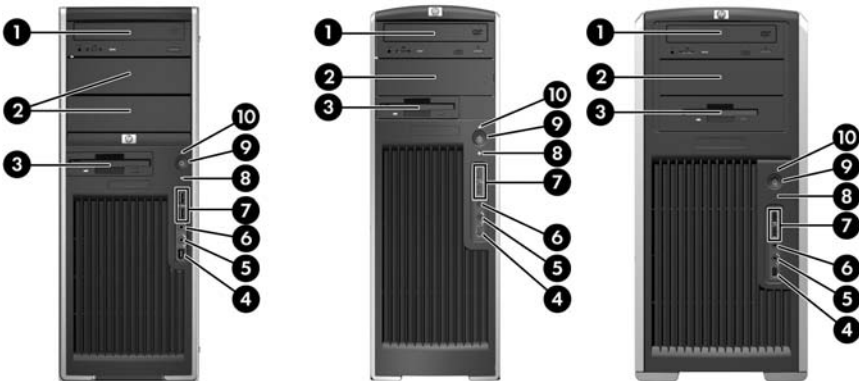
**NOTE** If you must restore the operating system with Windows OEM CDs (installing without using the *Restore Plus!* CDs), you will need to call Microsoft in order to provide the company with a Stock Keeping Unit (SKU) number. The SKU information is on the service tag and is the OS product number in the lower right hand section of the tag. It should say “OS: XXXXXXX” where the “XXXXXX” is the OS product number.



# Front and Back Panel Components







## Front Panel Components

The figures below are for reference only. Your HP workstation may look different.



xw4000 Series	xw6000 Series	xw8000/xw9000 Series
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Table 2-1 Front panel components \*

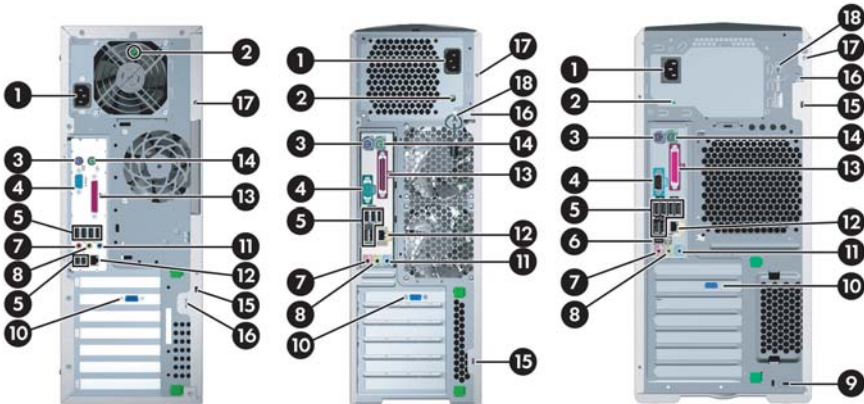
Item	Symbol	Description	Item	Symbol	Description
1		Optical drive	6		Headphone connector
2		5.25-inch drive bay	7		USB 2.0 (Universal Serial Bus) ports
3		Diskette drive (optional)	8		Hard drive activity light
4		IEEE-1394a connector **	9		Power button
5		Microphone connector	10		Power on light

\* Refer to the *Service and Technical Reference Guide* for your workstation for specific front panel component information.

\*\* IEEE-1394a is an optional feature for xw4000 and xw6000 series workstations. If the unit was purchased without this option, this connector will be covered.











# Rear Panel Components

The figures below are for reference only. Your HP workstation may look different.



xw4000 Series	xw6000 Series	xw8000/xw9000 Series
---------------	---------------	----------------------

Table 2-2 Rear panel components \*

Item	Symbol	Description	Item	Symbol	Description
1		Power cord connector	10		Graphics adapter
2		Built In Self Test (BIST) LED	11		Audio line-in connector
3		Keyboard connector	12		RJ-45 network connector
4		Serial connector	13		Parallel connector *
5		USB 2.0 ports	14		Mouse connector
6		IEEE-1394a connector	15		Cable lock slot
7		Microphone connector	16		Padlock loop
8		Audio line-out connector	17		Universal chassis clamp opening
9		SCSI connector or MiniSAS 4-port connector (optional)	18		Access panel key

\* Refer to the *Service and Technical Reference Guide* for your workstation for specific rear panel component information. The rear panel connectors are labeled with industry-standard icons and colors to assist you in connecting your peripheral devices.

# 3 Operating System Setup Software



**CAUTION** Do not add optional hardware or third-party devices to the HP Workstation until the operating system is successfully installed. Adding hardware might cause errors and prevent the operating system from installing correctly.

This section presents instructions to set up your OS and software, and to verify your system has the latest BIOS and drivers.

## Software Setup for Microsoft® Windows®

The first time you turn on the workstation, the operating system is installed automatically. This process takes about 5 to 10 minutes. Carefully read and follow the instructions on the screen to complete the installation.



**CAUTION** After the automatic installation has started, **DO NOT TURN OFF THE WORKSTATION UNTIL THE PROCESS IS COMPLETE**. Turning off the workstation during the installation process can damage the software that runs the workstation or prevent its proper installation.



**NOTE** After you have selected a language during initial boot of the OS, the language will be locked in on the hard drive. If the system is restored, the restore CD will check for the language stored on the hard drive and will restore only the original preinstalled language. In the case where a new hard drive is installed or no language is found on the disk, the Recovery CD will install any language requested. A language selection is not required for the 64-bit operating system.

For complete operating system installation and configuration instructions, refer to the operating system documentation that was provided with the workstation. Additional information is available in the online help tool after you successfully install the operating system.

## Restoring the Windows Operating System

Your workstation has a several methods to restore your Windows XP operating system to a near-factory state, or to the state of the system at a predefined restore point. Your system has a recovery partition on the system hard drive that contains software and data required for the restore process as described in the following sections.

### The RestorePlus! Process

The Window operating system and device drivers (for devices shipped with the system) are reinstalled using this process. Some application software may not be restored using the RestorePlus! process. In this case you must install the application software from the appropriate application CD. The RestorePlus! process can be executed from CD or from the recovery partition contained on your system hard drive.



**CAUTION** Backup your data before you attempt any operating system restore. All data on the Windows partition will be deleted when you restore using the RestorePlus! process. However, the recovery partition on the system drive and other partitions should not be affected.

### Creating a RestorePlus! CD

You can create a set of the CDs from your system if you have a CD burner. When you first boot your system, you will be prompted to make CDs for RestorePlus!, the Windows operating system, and a supplemental HP Backup and Recovery Manager CD. (There may be additional CDs you can create depending on the options you purchased.) You also have the option to move images of the CDs to another location, such as a network share, to be burned to CD at a later time or from another system.

### Restoring from RestorePlus! CDs

To start the RestorePlus! process, boot from the RestorePlus! CD and carefully follow the online instructions.

### Restoring from RestorePlus! on the recovery partition

Follow these steps to start the RestorePlus! process from the Emergency Recovery menu:

1. Boot the workstation.
2. Press the **F11** key when prompted during the boot process to enter the Emergency Recovery menu. The F11 prompt appears briefly during the boot process.
3. Select **Recover PC's factory installed operating system, drivers, utilities, and applications** from the Emergency Recovery menu.



**NOTE** Some applications may not be restored using this method.

## HP Backup and Recovery Manager Restore Points

HP Backup and Recovery Manager is preinstalled on your workstation. This software allows you to backup and restore your system and data using a restore point which is a snapshot of the system partition. A restore point can be used to return the system partition back to its state when the restore point was created.

Refer to the *Service and Technical Reference Guide* for your workstation for details on using the HP Backup and Recovery Manager, including restore points.

## Reclaiming Hard Disk Space from the Recovery Partition

The recovery partition can be removed to reclaim the hard drive space. If the recovery partition is removed, the **F11** Emergency Recovery function is not available. The ability to recover the system from data on the recovery partition will be lost. Any RestorePlus! media contained in the recovery partition will be deleted. The ability to create the RestorePlus! CD set will be lost.

To free up disk space, you can remove just the recovery partition, or you can completely uninstall the HP Backup and Recovery Manager application.

- The recovery partition can be removed using **Remove HP Recovery Partition** in the HP Backup & Recovery program folder. The recovery partition is deleted, the user partition is extended to reclaim the unused hard drive space, and the F11 boot prompt is removed. The HP Backup and Recovery Manager application remains and can be used for data backup and restore.
- The HP Backup and Recovery Manager application can be uninstalled using the Windows **Control Panel—>Add/Remove Programs** utility. The application is uninstalled, the recovery partition is deleted, the user partition is extended to reclaim the unused space, and the F11 boot prompt is removed. Emergency recovery as well as data backup and recovery is not possible after the application is uninstalled.



**CAUTION** Deleting the recovery partition or uninstalling the HP Backup and Recovery Manager application reduces or eliminates the ability to recover the system.

## Ordering Backup Software

If you are unable to create system recovery CDs or DVDs, the HP Restore Plus CD set can be obtained through product support on <http://www.hp.com/support>.



**NOTE** Before calling HP to order the software, be sure to have the serial number of your workstation available.

# Software Setup for Linux

This section contains information for installing and customizing your HP Linux Workstation.

## Installing and Customizing Linux—Preinstalled Workstations

If you have a Linux-preinstalled workstation, follow the instructions in this section to set up your OS and software.

After the boot process completes, you can view additional HP Linux documentation by simply opening your Internet browser (the browser is automatically set to use the local HP documentation page as its default). You can also access Linux Web links for Red Hat (Internet access required) by using your Internet browser.



**NOTE** For additional information concerning the setup of Linux—preinstalled or Linux—enabled workstations, refer to the *HP User Manual for Linux*, which is located at [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals). For additional information about HP and Linux, visit <http://www.hp.com/linux>.

## Starting the Linux Operating System

The first time the HP Workstation is booted, the Red Hat First Boot utility displays. This program allows you to enter your password, network, graphics, time, and keyboard settings for your workstation.



**CAUTION** Once the automatic installation has begun, DO NOT TURN OFF THE WORKSTATION UNTIL THE PROCESS IS COMPLETE. Turning off the workstation during the installation process can damage the software that runs the workstation or prevent its proper installation.



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**NOTE** When you enable the YPBind feature in the Network tab of the Linux Setup Tool, you might get a blank screen for about 15–30 seconds after you have selected and saved all of your settings and have exited the utility. This is normal. The boot process continues its execution after the screen returns.

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## Restoring the Linux Operating System



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**NOTE** To restore the Linux OS, the HP Driver CD and Red Hat box set are required. Download the latest HP Driver CD to get any new enhancements.

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For preloaded Linux systems, an icon called **Red Hat ISO's** is available on the desktop. Click this icon to go to the `/iso` directory. This directory contains the binary and source ISO files. This directory also contains the driver CD ISO which is the same as the CD that is shipped with the workstation. Follow the instructions in the **Readme** file in the `/iso` directory to burn the ISOs to CD.

HP recommends that you burn the ISOs to CD so you have a backup.

### Downloading the Latest HP Driver CD

To obtain the latest HP Driver CD, refer to “Obtaining the HP Installer Kit for Linux from the HP Support Website” in the *HP Workstations User Manual for Linux*.

### Installing with the HP Driver CD

To install with the HP Driver CD, refer to “Installing with the HP Installer Kit for Linux” in the *HP Workstations User Manual for Linux*.

## Installing and Customizing Linux–Enabled Workstations

Linux–enabled workstations are not preinstalled with Linux. They require the HP Installer Kit for Linux and the purchase of a Red Hat box set. The Installer kit includes the HP CDs necessary to complete the installation of all versions of the Red Hat box set that have been verified to work on HP Workstation hardware.

## Verifying Hardware Compatibility

To see which Linux versions have been verified to work on HP Workstation hardware:

1. Go to [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals).
2. Select your HP Workstation model.
3. Click the **Hardware Support Matrix for Linux** link.

## Installing the Linux Operating System

To install the Linux operating system on your Linux–enabled system, refer to [Restoring the Linux Operating System](#) and [Starting the Linux Operating System](#) in the previous sections.



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**NOTE** For additional information concerning the setup of Linux–preinstalled or Linux–enabled workstations, refer to the *HP User Manual for Linux*, located at [http://www.hp.com/support/linux\\_user\\_manual](http://www.hp.com/support/linux_user_manual). For additional information about HP and Linux, visit <http://www.hp.com/linux>.

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**NOTE** For detailed information on Linux installation, refer to the *HP Installer Kit for Linux* manual.

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## Red Hat Activation

With your workstation you received an activation card called *Activate Your Subscription*. This card is necessary to activate your Linux subscription with Red Hat Network. Until activation, your Red Hat Linux is not fully enabled.

To activate Red Hat Linux, click the **Activate Your Subscription** icon on your desktop. This takes you to [www.redhat.com/activate](http://www.redhat.com/activate). Follow the instructions at this website to activate your subscription using the information on the card.

HP recommends that you activate your subscription as soon as you connect to the web.



**NOTE** Keep the Red Hat activation card with your workstation registration card for future reference.

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## Verify After First Boot

HP continually strives to implement new enhancements that will increase functionality, performance, and reliability of your HP Workstation. To ensure that your workstation takes advantage of the latest enhancements, HP recommends that you install the latest BIOS, driver and software updates on a regular basis.

After successfully booting your system for the first time:

- Verify you have the latest system BIOS loaded. Refer to [Upgrading the BIOS](#) for instructions.
- Verify you have the latest drivers for your system. Refer to [Upgrading Device Drivers](#) for instructions.
- Review [Locating HP Resources](#) to become familiar with your available HP resources.

Also, consider the following:

- Subscribe to Driver Alerts at <http://www.hp.com/go/subscriberschoice>.

## Upgrading the BIOS

After the first boot, it is a good practice to verify your system is operating with the latest BIOS.

To check the current BIOS on the system:

During power up, wait for the prompt **F10=setup** to appear on the lower right corner of the screen. After the prompt appears, press the **F10** key to enter F10 setup. The F10 Setup Utility displays and lists the BIOS version under **File > System Information**. Note this number so that you can compare it with what is on the HP website.

To locate the latest BIOS available, go to <http://www.hp.com/go/workstationsupport>. Select **Download Drivers and Software** from the left-hand menu and follow the instructions to locate the latest BIOS available for your workstation.

If the BIOS on the Web site is the same as the version on your system, no further action is required.

If the BIOS on the Web site is a later version, download the appropriate version for your workstation. Follow the instructions in the release notes to complete the installation.

## Upgrading Device Drivers

To install hardware devices such as a printer, display adapter, or network adapter, after the operating system is installed, the operating system needs access to the appropriate software drivers for the devices. Device drivers are usually provided on a CD supplied with the peripheral device.

To locate the most current drivers, go to <http://www.hp.com/go/workstationsupport>. Select **Download Drivers and Software** from the left-hand menu and follow the instructions to locate the latest drivers available for your workstation.

If no driver is found, visit the website of the manufacturer of the peripheral device.



# 4 Troubleshooting

## Self Troubleshooting

This section provides some self-help tools and troubleshooting tables that you can use to troubleshoot your system.

### HP Insight Diagnostics

HP Insight Diagnostics is an offline diagnostic utility that allows you to perform system testing. With this utility, you can test your system hardware and view the hardware configuration information for your system.

To use the HP Insight Diagnostics utility, insert the *Documentation and Diagnostics* CD into your system and reboot. Follow the onscreen menu options and directions to begin your testing.



**NOTE** If you do not have the *Documentation and Diagnostics* CD, go to <http://www.hp.com/go/workstationsupport>. Select **Download Drivers and Software** from the left-hand menu and follow the instructions to locate the latest documentation and diagnostics information available for your workstation.

For more information on using HP Insight Diagnostics, click the **Help** tab from within the program or refer to the *Service and Technical Reference Guide* at [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals).

## HP Troubleshooting Resources and Tools

### HP Help and Support Center

The HP Help and Support Center is a customized HP user interface that enhances the Windows XP Help and Support Center Help feature. This customized utility allows you to access specific information about your HP Workstation such as configuration information by clicking **Start > Help and Support Center**. The interface also provides customized help and support links to the HP Web site related to your HP Workstation.



**NOTE** The customized HP Help and Support Center is not available on Windows XP Professional x64 Edition or on Linux.

### E-Support

Online access and support resources include Web-based troubleshooting tools, technical knowledge databases, driver and patch downloads, online communities, and product change notification services.

The following sites are also available to you:

- <http://www.hp.com>—Provides useful product information.
- [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals)—Provides the latest online documentation.
- <http://www.hp.com/go/workstationsupport>—Provides technical support information for your workstation.
- <http://www.hp.com/support>—Provides a listing of the worldwide technical support phone numbers. Access the numbers by visiting the Web site, selecting your region, and clicking **Contact HP** in the upper-left corner.

## Troubleshoot a Problem

To help you troubleshoot issues with your system, HP provides the Business Support Center (BSC). BSC is a portal to an extensive selection of online tools. To access BSC, visit <http://www.hp.com/go/workstationsupport>. Select your product by clicking on the appropriate product link.

From the left-hand Business Support Center menu window, select the **troubleshoot a problem** link. From the “troubleshoot a problem” page, select the appropriate link from under the “useful documents” area.

## Instant Support/Active Chat

HP Instant Support is a set of Web-based support tools that automate and speed the resolution of desktop computing, tape storage, and printing problems.

Active Chat enables you to electronically submit a support ticket to HP over the Web. When you submit a support ticket, Active Chat will collect information about the computer and pass it to an online support specialist. The collection of information may take up to 30 seconds depending on the computer configuration. Once you have submitted a support ticket, you will receive a confirmation message containing your case ID, the support hours for your location and the estimated time of response.

For more information about HP Instant Support and Active Chat and how to use them, visit HP at [http://www.hp.com/hps/hardware/hw\\_professional.html](http://www.hp.com/hps/hardware/hw_professional.html).



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**NOTE** This feature is not available on Windows XP Professional x64 Edition or on Linux.

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## Customer Advisories

Customer advisories provide clients important information about their system. To search for applicable customer advisories for your system, visit <http://www.hp.com> and use the search tool. To maximize your search efforts, use the “+” symbol to locate valid words. For example, to search for customer advisories for the xw8200, enter **+xw8200 +“customer advisory”** and press **Enter**. You can also use the “-” (minus) symbol to exclude certain words. You can also register with Subscriber's Choice to automatically receive customer advisories related to your system. Refer to [Locating HP Resources](#) for information on how to register to Subscriber's Choice.

## Product Change Notifications

Product Change Notifications (PCNs) provide customers with a notice of changes to their product. You can visit <http://www.hp.com> and perform a search for PCNs related to your system. To maximize your search efforts, use the “+” symbol to locate valid words. For example, to search for PCNs for the xw8200, enter **+xw8200 +PCN** and press **Enter**. You can also use the “-” (minus) symbol to exclude certain words.

You can also register with Subscriber's Choice to automatically receive PCNs related to your system. Refer to [Locating HP Resources](#) for information on how to register to Subscriber's Choice.

## Helpful Hints

If you encounter some minor problem with your workstation, monitor, or software, refer to the following list of general suggestions before taking further action.

### At Startup

- Check that the workstation and monitor are plugged into a working electrical outlet.
- Remove all diskettes from your system before turning it on.
- Check to see that the workstation is turned on and the green power light is on.
- If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on your system by visiting <http://www.hp.com/products/quickspecs>.
- Check to see that the monitor is turned on and the green monitor light is on.
- Turn up the brightness and contrast controls of the monitor if the monitor is dim.
- If your workstation has multiple video sources installed and a single monitor, the monitor must be connected to the monitor connector on the source selected as the primary VGA adapter. During startup, the other monitor connectors are disabled; if the monitor is connected into one of these ports, it will not function after POST. You can select the default VGA source in Computer Setup (F10).

### During Operation

- Look for blinking LEDs on the front of the workstation. The blinking lights are error codes that will help you diagnose the problem. Refer to [Diagnostic Lights and Audible \(Beep\) Codes](#) for information on interpreting diagnostic lights and audible codes.
- Press and hold any key. If the system beeps, then your keyboard is operating correctly.
- Check all cable connections for loose connections or incorrect connections.
- Wake the workstation by pressing any key on the keyboard or the power button. If the system remains in suspend mode, shut down the system by pressing and holding the power button for at least four seconds, then press the power button again to restart the system. If the system will not shut down, unplug the power cord, wait a few seconds, then plug it in again. If it does not restart automatically, press the power button to start the workstation.
- Reconfigure your workstation after installing a non–plug and play expansion board or other option. See [Hardware Installation Problems](#) for instructions.
- Be sure that all the needed device drivers have been installed. For example, if you have connected a printer, you need to install a printer driver.
- If you are working on a network, plug another workstation with a different cable into the network connection. There may be a problem with the network plug or cable.
- If you recently added new hardware, remove the hardware and see if the workstation functions properly.

- If you recently installed new software, uninstall the software and see if the workstation functions properly.
- If the screen is blank, plug the monitor into a different video port on the workstation if one is available. Or, change out the monitor with a monitor that you know is working properly.
- Upgrade the BIOS. A new release of the BIOS could have been released that supports new features or fixes your problem.
- For more detailed information, refer to the troubleshooting chapter in the *Service and Technical Reference Guide* at [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals).

## Customizing the Monitor Display

You can manually select or change the monitor model, refresh rates, screen resolution, color settings, font sizes, and power management settings. To do so, right-click the desktop, then click **Properties** to change display settings. For more information, refer to the online documentation provided with the graphics controller utility or the documentation that came with your monitor.

## Power-On Self Test (POST) Error Messages

POST is a series of diagnostic tests that runs automatically when the system is turned on. An audible, visual, or both message occurs before the operating system boots if the POST encounters a problem. POST checks the following items to ensure that the workstation system is functioning properly:

- Keyboard
- Memory modules
- Diskette drives
- All mass storage devices
- Processors
- Controllers
- Fans
- Temperature Sensors
- Cables (front/rear panels, audio, USB ports)

You can also find additional information about POST error messages in the *Service and Technical Reference Guide*, which is available at [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals).

## Basic Troubleshooting




This section concentrates on problems that you might encounter during the initial setup process. Additional troubleshooting information is available in the *Service and Technical Reference Guide* at [http://www.hp.com/support/workstation\\_manuals](http://www.hp.com/support/workstation_manuals).

### General Problems

You may be able to easily resolve the general problems described in this section. If a problem persists and you are unable to resolve it yourself or if you feel uncomfortable about performing the operation,

you can contact an HP customer care center, or you can contact an authorized dealer or reseller. For a list of support telephone numbers for your region, visit <http://www.hp.com/support>, select your region, and click **Contact HP** in the upper-left corner.

**Table 4-1** General Installation Problems

Problem	Cause	Solution
Workstation appears locked up and will not turn off when the power button is pressed.	Software control of the power switch is not functional.	Press and hold the power button for at least four seconds until the workstation turns off.
Workstation will not respond to USB keyboard or mouse.	Workstation is in Stand by mode.	Press the power button to resume from standby mode.   <b>CAUTION</b> When attempting to resume from standby mode, do not hold down the power button for more than four seconds. Otherwise, the workstation will shut down and you will lose your data.
Workstation date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced.   <b>NOTE</b> Connecting the workstation to a live AC outlet prolongs the life of the RTC battery	First, reset the date and time using Computer Setup (F10). If the problem persists, replace the RTC battery. See the <i>Service and Technical Reference Guide</i> for instructions on installing a new battery, or contact an authorized dealer or reseller for RTC battery replacement.
Workstation appears to pause periodically.	Network driver is loaded and no network connection is established.	Establish a network connection, or use Computer Setup (F10) to disable the network controller.
Cursor will not move using the arrow keys on the keypad.	The Num Lock key might be on.	Press the Num Lock key. The Num Lock light should not be on if you want to use the arrow keys. The Num Lock key can be disabled (or enabled) in Computer Setup (F10).
Cannot remove workstation cover or access panel.	Solenoid hood lock, featured on some systems, is locked.	Unlock the solenoid hood lock using Computer Setup (F10). The solenoid hood lock FailSafe Key, a device for manually disabling the solenoid hood lock, is available from HP. You will need the FailSafe Key in case of forgotten password, power loss, or workstation malfunction. (Not applicable to the xw8000/xw9000 series.)
	The panel is locked (xw6000/xw8000/xw9000 series).	Use the key located on the back of the unit to unlock the panel.
Poor performance is experienced.	Processor is hot.	<ol style="list-style-type: none"> <li>1. Make sure the airflow to and from the workstation is not blocked.</li> <li>2. Make sure the fans are connected and working properly.</li> <li>3. Make sure the processor heatsink is installed properly.</li> </ol>
	Hard drive is full.	Transfer data from the hard drive to create more space on the hard drive.
	The customer has memory installed in a single channel instead of in both channels.	Ensure DIMMs are matched and installed in both memory channels for best performance.
System does not power on and the LEDs on the front of the workstation are not blinking.	System unable to power on.	 <b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.

**Table 4-1** General Installation Problems (continued)

Problem	Cause	Solution
		Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:
		<ol style="list-style-type: none"> <li>1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds.</li> <li>2. The problem may be on the system board. Contact HP for assistance.</li> </ol>
		OR
		Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then:
		<ol style="list-style-type: none"> <li>1. Check that unit is plugged into a working AC outlet.</li> <li>2. Open the access panel and check that the power button harness is properly connected to the system board.</li> <li>3. Check that ALL power supply cables are properly connected to the system board.</li> <li>4. Check the power supply functionality. <ol style="list-style-type: none"> <li>a. Disconnect the AC power.</li> <li>b. Disconnect ALL internal power supply cables from the system board.</li> <li>c. Plug in the AC power.</li> </ol> </li> </ol>
		<ul style="list-style-type: none"> <li>• If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem may be on the system board. Contact HP for assistance.</li> <li>• If the power supply fan does not spin or the BIST* LED does not light, the problem may be in the power supply. Contact HP for assistance.</li> </ul>

\* Refer to your workstation's Service and Technical Reference Guide for BIST information.


## Hardware Installation Problems

You might need to reconfigure the workstation when you add or remove hardware, such as an additional optical drive. If you install a plug and play device, some operating systems automatically recognize the device and configure the workstation. If you install a non-plug and play device, you must reconfigure the workstation after installing the new hardware.

**Table 4-2** Hardware Installation Problems

Problem	Probable Cause	Recommended Solution
A new device is not recognized as part of the system.	Device is not seated or connected properly.	Ensure that the device is properly and securely connected and that pins in the connector are not bent down.
	Cables of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected and that pins in the cable or connector are not bent down.
	Power switch of new external device is not turned on.	Turn off the workstation, turn on the external device, then turn on the workstation to integrate the device with the workstation system.

**Table 4-2** Hardware Installation Problems (continued)

Problem	Probable Cause	Recommended Solution
	When the system advised you of changes to the configuration, you did not accept them.	Reboot the workstation and follow the instructions for accepting the changes.
	A plug and play board may not automatically configure when added if the default configuration conflicts with other devices.	Use Computer Setup (F10) to reconfigure or disable devices to resolve the resource conflict.
Workstation will not start.	Wrong memory modules were used in the upgrade or memory modules were installed in the wrong location.	<ol style="list-style-type: none"> <li>1. Review the documentation that came with the system to determine if you are using the correct memory modules and to verify the proper installation.</li> <li>2. If you still cannot resolve the issue, contact Customer Support.</li> <li>3. Observe the beeps and LED lights on the front of the workstation. See <a href="#">Diagnostic Lights and Audible (Beep) Codes</a> to determine possible causes.</li> </ol>
Workstation will not shut down.	Proper steps must be followed.	<ol style="list-style-type: none"> <li>1. Shut down the operating system software.</li> <li>2. Manually turn off power to the workstation by pressing and holding the power button for four seconds.</li> </ol> <div style="text-align: right;">  <b>CAUTION</b> Manually turning off the power bypasses the standby state and can result in loss of data. </div> <ol style="list-style-type: none"> <li>3. To reconfigure the power button to work in On/Off mode, run Computer Setup (F10).</li> </ol> <p>For more information about using Computer Setup, refer to the <i>Service and Technical Reference Guide</i>, which is available through a link on the <i>Documentation and Diagnostics</i> CD (<a href="http://www.hp.com/support/workstation_manuals">http://www.hp.com/support/workstation_manuals</a>).</p>



## Diagnostic Lights and Audible (Beep) Codes

This section covers the front panel light (LED) error and operation codes as well as the audible codes that may occur before or during the Power-On Self-Test (POST).

**Table 4-3** Diagnostic Lights and Audible Codes




Activity	Possible Cause	Recommended Action
Green Power LED On. No beeps.	Workstation on.	None
Green Power LED blinks every two seconds.** No beeps.	Workstation in Suspend to RAM mode (select models only) or normal Suspend mode.	None
Green Power LED is off.** No beeps.	Workstation in Suspend to Disk or "Hibernate" mode.	None
Green Power LED blinks three times, once per second.** No beeps	Workstation in Suspend to RAM mode (select models	None

**Table 4-3** Diagnostic Lights and Audible Codes (continued)


Activity	Possible Cause	Recommended Action
	only) or normal Suspend mode.	
Green Power LED blinks four times, once per second.** No beeps.	Workstation in Suspend to Disk or "Hibernate" mode.	None
For the following LED activity and beeps, the beeps will be heard through the chassis speaker. Blinks and beeps will be repeated for 5 cycles, after that, only the blinks will continue to repeat.		
Red Power LED blinks two times, once every second, followed by a two-second pause. Two beeps.	<p>Processor thermal protection activated:</p> <p>A fan may be blocked or not turning.</p> <p>OR</p> <p>The heatsink/fan assembly is not properly attached to the processor.</p>	<div>  <p><b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> </div> <ol style="list-style-type: none"> <li>1. Ensure that the workstation air vents are not blocked and the cooling fan is running.</li> <li>2. Open the access panel, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed.</li> <li>3. If fan is plugged in and seated properly, but is not spinning, the problem may be in the processor fan. Contact HP for assistance.</li> <li>4. Verify that the fan assembly is properly attached. If problems persist, there may be a problem with the processor heatsink. Contact HP for assistance.</li> </ol>
Red Power LED blinks three times, once every second, followed by a two-second pause. Three beeps.	Processor not installed (not an indicator of bad processor).	<ol style="list-style-type: none"> <li>1. Check to see that the processor is present.</li> <li>2. Reseat the processor.</li> </ol>
Red Power LED blinks four times once every second, followed by a two-second pause. Four beeps.	Power failure (power supply is overloaded)	<div>  <p><b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> </div> <ol style="list-style-type: none"> <li>1. Open the access panel and ensure the following connections are secure on the system board: <ul style="list-style-type: none"> <li>• 24-pin main power (all systems)</li> <li>• 4-pin CPU (xw4000 series)</li> <li>• 8-pin CPU (xw6000/xw8000/xw9000 series)</li> <li>• 4-pin memory (xw8000/xw9000 series)</li> </ul> </li> <li>2. Check if a device is causing the problem by removing ALL attached devices (such as hard, diskette, or optical drives, and expansion cards.) Power on the system. If the system enters the POST, then power off and replace one device at a time and repeat this procedure, until failure occurs. Replace the device that is causing the failure. Continue adding devices one at a time to ensure all devices are functioning properly.)</li> <li>3. Check the power supply functionality. <ol style="list-style-type: none"> <li>a. Disconnect the AC power.</li> <li>b. Disconnect ALL internal power supply cables.</li> </ol> </li> </ol>



**Table 4-3** Diagnostic Lights and Audible Codes (continued)

Activity	Possible Cause	Recommended Action
		<p>c. Plug in the AC power.</p> <ul style="list-style-type: none"> <li>• If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem may be on the system board. Contact HP for assistance.</li> <li>• If the power supply fan does not spin or the BIST* LED does not light, the problem may be in the power supply. Contact HP for assistance.</li> </ul>
Red Power LED blinks five times, once every second, followed by a two-second pause. Five beeps.	Pre-video memory error	<p> <b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> <li>1. Reseat DIMMs</li> <li>2. Replace DIMMs one at a time to isolate faulty module</li> <li>3. Replace third-party memory with HP memory.</li> <li>4. The problem may be on the system board. Contact HP for assistance.</li> </ol>
Red Power LED blinks six times, once every second, followed by a two-second pause. Six beeps.	Pre-video graphics error.	<p> <b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> <li>1. Reseat the graphics card.</li> <li>2. The problem may be on the graphics card. Contact HP for assistance.</li> <li>3. The problem may be on the system board. Contact HP for assistance.</li> </ol>
Red Power LED blinks seven times, once every second, followed by a two-second pause. Seven beeps.	System board failure (ROM detected failure prior to video).	<ol style="list-style-type: none"> <li>1. Clear CMOS.</li> <li>2. The problem may be on the system board. Contact HP for assistance.</li> </ol>
Red Power LED blinks eight times, once every second, followed by a two-second pause. Eight beeps.	Invalid ROM based on bad checksum.	<p> <b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component.</p> <ol style="list-style-type: none"> <li>1. Clear CMOS.</li> <li>2. Upgrade the ROM using a ROMPaq diskette, CD, diskette, or USB removable device (e.g., HP Drive Key). See the "ROM Flash" section of the <i>Service and Technical Reference Guide</i> at <a href="http://www.hp.com/support/workstation_manuals">http://www.hp.com/support/workstation_manuals</a>. A ROMPaq is a software support bundle of files that allows you to upgrade your ROM.</li> <li>3. The problem may be on the system board. Contact HP for assistance.</li> </ol>
Red Power LED blinks nine times, once every second, followed by a two-second pause. Nine beeps.	System powers on but does not boot.	<ol style="list-style-type: none"> <li>1. The problem may be on the system board. Contact HP for assistance.</li> <li>2. The problem may be in the processor. Contact HP for assistance.</li> </ol>

**Table 4-3** Diagnostic Lights and Audible Codes (continued)

Activity	Possible Cause	Recommended Action
System does not power on and LEDs are not blinking. No beeps.	System unable to power on.	<div>  <b>CAUTION</b> Internal components may be powered even when the system is off. To prevent damage, disconnect the workstation power cord before you remove a component. </div> <p>Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then:</p> <ol style="list-style-type: none"> <li>1. Remove the expansion cards one at a time and try holding the power button again for less than 4 seconds.</li> <li>2. The problem may be on the system board. Contact HP for assistance.</li> </ol> <p>OR</p> <p>Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn on green then:</p> <ol style="list-style-type: none"> <li>1. Check that unit is plugged into a working AC outlet.</li> <li>2. Open the access panel and check that the power button harness is properly connected to the system board.</li> <li>3. Check that ALL power supply cables are properly connected to the system board.</li> <li>4. Check the power supply functionality <ol style="list-style-type: none"> <li>a. Disconnect the AC power.</li> <li>b. Disconnect ALL internal power supply cables.</li> <li>c. Plug in the AC power.</li> </ol> </li> </ol> <ul style="list-style-type: none"> <li>• If the power supply fan spins and the BIST* LED lights, the power supply is functional. The problem may be on the system board. Contact HP for assistance.</li> <li>• If the power supply fan does not spin or the BIST* LED does not light, the problem may be in the power supply. Contact HP for assistance.</li> </ul>

\* Refer to your workstation's Service and Technical Reference Guide for BIST information.

## Calling Technical Support

At times you may encounter an issue that requires technical support. When you call technical support:

- Be in front of your workstation.
- Write down the workstation serial numbers, product numbers, model names, and model numbers and have them in front of you.
- Note any applicable error messages.
- Note any add-on options.
- Note the operating system.
- Note any third-party hardware or software.
- Note the details of any blinking LEDs on the front of the workstation.

- Note the applications you were using when you d the issue.
- Note the power supply BIST status, if applicable.
- Be prepared to spend the time necessary troubleshooting the problem with the service technician.



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**NOTE** When calling in for service or support, you may be asked for the Product Number (example: PS988AV) of your workstation. If your workstation has a Product Number, it is generally located next to the 10- or 12-digit Serial Number of your workstation.

**NOTE** Refer to [Ventilation, COA Label, and Serial Number Label Information](#) for the location of the Serial Number label on your workstation. In general, the Serial Number and Product Number label are located at the rear of the workstation.

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For a listing of all worldwide technical support phone numbers, visit <http://www.hp.com/support>, select your region and click **Contact HP** in the upper-left corner.





